WHAT IS CLAIMED IS:

1. A humidifier for humidifying a fuel cell composed of an anode side humidifier and a cathode side humidifier each possessing a plurality of hollow fiber membrane modules for migrating moisture between a supply gas, which is supplied to a fuel cell, and an exhaust gas, which is exhausted from the fuel cell to thereby humidify the supply gas, said humidifier comprising:

a pair of heads which hold both ends of said hollow fiber membrane modules,

a connecting member which connects each of heads, and

a device for warming the supply gas composed of conduits through which a cooling medium exhausted from the fuel cell is passed,

wherein said device for warming the supply gas is configured so that first warms a humidifier at an outlet side of the supply gas, and then warms a humidifier at an inlet side of the supply gas.

2. The humidifier according to Claim 1, wherein said device for warming the supply gas is configured so that first warms the cathode side humidifier at an outlet side of the supply gas.

3. The humidifier according to Claim 2, wherein said

device for warming the supply gas is configured so that first warms the cathode side humidifier at an outlet side of the supply gas, and then warms the cathode side humidifier at the inlet side of the supply gas.

4. The humidifier according to Claim 3, wherein said device for warming the supply gas warms the anode side humidifier at an outlet side of the supply gas after warming the cathode side humidifier at the inlet side of the supply gas.

5. The humidifier according to any one of Claims 1 to 4, wherein said device for warming the supply gas is composed a conduit or conduits configured so as to follow said heads.

6. A process for warming a humidifier for fuel cell comprising an anode side humidifier and a cathode side humidifier each possessing a plurality of hollow fiber membrane modules for migrating moisture between a supply gas, which is supplied to a fuel cell, and an exhaust gas, which is exhausted from the fuel cell to thereby humidify the supply gas,

said process comprising

a first step for warming the humidifier at an outlet side of the supply gas by a cooling medium just exiting said fuel cell and still remaining hot; and

a second step for warming the supply gas at an inlet side by the cooling water after warming the humidifier at the outlet

side of the supply gas.